## INSTALLATION

### 1 Placement
- Outdoor use: 0 - 40°C (32 - 104°F)
- Indoor use: 20 - 30°C (68 - 86°F)

### 2 Remove Connector Cover
- Press the outlet cover release tab (one each side) and pivot cover off the unit.

### 3 Remove Battery (if wall-mounting - if not proceed at Step 5)
- Disconnect battery wires from battery. Remove battery. Press cover release tab (one each side) and remove cover.

### 4 Mount Back-UPS (optional)
- Wall Anchor
- Mounting Hole

### 5 Connect/Install Battery, Install Battery Cover
- Install battery cover. Connect and install the battery. Press the outlet cover release tab (one each side) and pivot cover off the unit.

### 6 Connect Cable Modem, DSS or CATV Receiver to Surge Protection (optional)
- From Cable Provider (Phone, Internet, and/or CATV, or DSS) To Cable Modem, VCR, DSS or TV Cable Box
- RJ-45 Connectors (can accept RJ-11)

### 7 Connect Phone Line or DSL to Surge Protection (optional)
- Phone Line In (Standard or DSL) To Hub or Router
- Modem/Phone/Fax

### 8 Connect Network Equipment
- From Network Device (or Computer Using a Crossover Cable) To Hub or Router

### 9 Connect Equipment Power Cords
- Hub or Router
- Modem

### 10 Install Connector Cover
- Align the holes in the cover with the connector cover release tabs (one each side) and lower connector cover.

### 11 Connect to Power Source and Switch on UPS Power
- The line cord used for this connection is supplied by the user.

---

**NOTE:** APC recommends your network equipment (computer, modem, router, hub, or other networked devices) be completely installed, configured, and tested prior to adding the UPS to the network.
Transfer Voltage/Sensitivity Adjustment (Optional)

In situations where the Back-UPS or connected equipment appears too sensitive to input voltage, it may be necessary to adjust the transfer voltage. This is a simple task requiring use of the front panel pushbutton. It can also be accomplished using the Configuration Page Screen in the supplied software (see Install and Setup Software). To adjust the transfer voltage, proceed as follows:

1. Plug the unit into an AC utility power source; the Back-UPS will go into Standby Mode (no indicators lit).
2. Press the front panel pushbutton fully inward for 10 seconds. All indicators on the Back-UPS will flash to acknowledge going into Programming Mode.
3. The Back-UPS will then indicate its current Sensitivity Setting, as shown in the following table.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Flashing</th>
<th>Sensitivity Setting</th>
<th>Input Voltage Range (for utility operation)</th>
<th>Use When</th>
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<tbody>
<tr>
<td>I (yellow)</td>
<td></td>
<td>Low</td>
<td>180 - 266 Vac</td>
<td>Input voltage is extremely low or high, not recommended for computer loads.</td>
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<td>(yellow, and red)</td>
<td>Medium (factory default)</td>
<td>160 - 266 Vac</td>
<td>Back-UPS frequently goes on Battery (recommended)</td>
<td></td>
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<td>(yellow, red, and red)</td>
<td>High</td>
<td>196 - 256 Vac</td>
<td>Connected equipment is sensitive to voltage fluctuations.</td>
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1. To select the Low Sensitivity setting, press the pushbutton until the yellow indicator is flashing.
2. To select the Medium Sensitivity setting, press the pushbutton until the yellow and red indicators are flashing.
3. To select the High Sensitivity setting, press the pushbutton until the yellow, red, and red indicators are flashing.
4. Circuit Breaker - the rocker-type circuit breaker switch located on the bottom panel of the Back-UPS will trip if an overload condition forces the Back-UPS to disconnect itself from AC utility power. If the switch trips, disconnect non-essential equipment. Reset the circuit breaker by pushing it to the ON position.
5. In situations where the Back-UPS or connected equipment appears too sensitive to input voltage, it may be necessary to adjust the transfer voltage. This is a simple task requiring use of the front panel pushbutton. It can also be accomplished using the Configuration Page Screen in the supplied software (see Install and Setup Software). To adjust the transfer voltage, proceed as follows:

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Install and Setup Software

Follow the on-screen instructions.

Figure 1. InstallShield Wizard Screen

Figure 2. InstallShield Welcome Screen

Figure 3. InstallShield Licence Agreement Screen

Figure 4. Choose Destination Location Screen

Figure 5. Setup Status Screen

Figure 6. InstallShield Wizard Complete Screen

Figure 7. APC Software Startup Menu Selections

Install and Setup Software

If Autoplay is enabled on your computer, the software on the CD-ROM will automatically start the installation program.

If Autoplay is not enabled on the computer, proceed as follows:

1. On the computer desktop of the display, double-click on My Computer, or start Windows Explorer to locate the computer’s CD-ROM drive icon.
2. Double-click on the CD-ROM drive icon and then double-click on the setup.exe icon. The software will start and display the InstallShield Wizard Screen (Figure 1). The software will begin the installation process. To stop the installation, click Cancel.

3. After about 4 seconds, the software will display the Welcome Screen (Figure 2). To continue, click Next. To cancel the installation, click Cancel.

4. The software will then display the Licence Agreement (Figure 3). Please read the Agreement and accept the terms by clicking Yes. To decline the Agreement, click No - the software will not install.

5. The software will display the Choose Destination Location Screen (Figure 4). Select Browse to locate the installation folder. Click Next to accept the system default location, the system will then display the Setup Status Screen (Figure 5). Click on Cancel to stop the installation.

6. The software then displays the InstallShield Wizard Complete Screen (Figure 6). Select Finish to quit the installation program.

Transfer Voltage/Sensitivity Adjustment (Optional)

In situations where the Back-UPS or connected equipment appears too sensitive to input voltage, it may be necessary to adjust the transfer voltage. This is a simple task requiring use of the front panel pushbutton. It can also be accomplished using the Configuration Page Screen in the supplied software (see Install and Setup Software). To adjust the transfer voltage, proceed as follows:

1. Plug the unit into an AC utility power source; the Back-UPS will go into Standby Mode (no indicators lit).
2. Press the front panel pushbutton fully inward for 10 seconds. All indicators on the Back-UPS will flash to acknowledge going into Programming Mode.
3. The Back-UPS will then indicate its current Sensitivity Setting, as shown in the following table.
8. Following installation, the Back-UPS HS software is available in the Start menu. Upon launching the program, it searches for all Back-UPS HS devices on the network, and will identify them as shown in Figure 8 by IP Address and MAC Address. The IP Address is automatically assigned to the Back-UPS by the DHCP services from your hub or router. IP Addresses assigned by the DHCP service may automatically change over time. Thus, APC recommends you do not bookmark the IP Address, as you may not be able to access it through your browser. The MAC Address is assigned to the Back-UPS HS 500 at the factory.

Figure 8. Back-UPS HS IP Address and MAC Address Screen

9. If there are no DHCP services on the network, or if you want to assign an IP Address you can easily remember, you can manually assign an IP Address to the Back-UPS by clicking on the IP Configuration button. The address you assign must follow the format shown in Figure 9 and cannot duplicate an address already assigned. Figure 10 shows the IP Configuration Screen with the IP Address fields set to zero (0).

To assign an IP Address to your computer, please read and follow the directions that came with your computer.

Figure 10. Blank Assign IP Address Screen

10. You can assign a name to the Back-UPS by clicking on the Assign Name button (Figure 8) and entering the name in the Assign Name Screen dialog. It will appear in the column to the left of the IP Address of the device (Figure 11). Names should not be duplicated.

Figure 11. Assign Name Screen

11. To reset the Back-UPS HS to factory default values, use the UPS Settings button. If the Back-UPS HS does not reset using the software, remove the Battery Cover and insert the object (about 2 inches in length) into the hole located next to the telephone jack (Figure 12) for approximately 5 seconds. Note: The telephone jack is provided for factory testing only - do not connect anything to this jack.

Figure 12. Manual Reset Access

12. Before performing any UPS maintenance task, check the Status of the UPS by clicking on the Status link. The screen shown in Figure 13 will be displayed.

Figure 13. Back-UPS HS 500 Status Screen

13. To change the configuration of the Back-UPS or perform UPS maintenance, you must log on to the web page (Figure 11) by clicking on the UPS Settings button. When this page is displayed, enter a default name for the UPS screen name. This name is used by the application to help positively identify individual devices more easily.

Figure 14. Log On Screen

14. Using the Maintenance Screen (Figure 15), you can perform a Battery Self-Test, Update the Battery Replacement Date, Change the User Name or Password (as previously discussed) then click Update Now, or you can Restore Factory Defaults. Note: You must be logged on to perform any of these tasks.

Figure 15. Maintenance Page Screen

15. Using the Configuration Page Screen (Figure 14), you can adjust the Sensitivity of the Back-UPS. By adjusting the Sensitivity, the Back-UPS will allow the unit to switch to battery power depending on the quality of the AC utility power being supplied to the unit. Use of the Sensitivity settings are for the following conditions:

- Low - Use only for extreme conditions of low input voltage. Not recommended for computer loads.
- Medium - Back-UPS frequently goes On Battery due to low input voltage (recommended).
- High - Connected equipment is sensitive to low voltage.

The Configuration Page Screen also allows you to enable or disable the Audible Alarm. If enabled, this alarm operates as described in the Status Alert section of this manual. If disabled, the Back-UPS will not emit the alarm.

Additionally, the Configuration Page Screen allows you to adjust the voltage Transfer Points. The Back-UPS will transfer to On Battery operation at input voltages above or below the points selected in the drop-down Voltage menu.

Finally, the Configuration Page Screen provides Output Control for the following conditions:

- High - automatic switching power Off and then On at the selected output. If an on load change requires a reset, the output cannot be restored.

To use the Configuration Page Screen, you must be logged on to the Back-UPS. Select the desired function and click on the Apply button. To reset the unit to the factory defaults, click the Reset button.

Figure 16. Configuration Page Screen

Specifications

- Input Voltage (mVA): 180 - 200 Vac
- Input Frequency: 47 - 63 Hz (adjustable)
- Maximum Load: 500 VA, 300 Watts
- Maximum Output: 2300 W
- Maximum Output: 1327 VA, 3840 VA
- Operating temperature: 32 - 104°F (-20 to 40°C)
- Storage temperature: 5 - 113°F (-15 to 45°C)
- Storage humidity: 10 - 95% non-condensing
- Operating humidity: 40 - 90% non-condensing
- Physical: (H x W x D) 14.65 x 8.85 x 4.13 in (37.2 x 22.5 x 10.5 cm)
- Weight: 16.3 lb (7.4 kg)
- Weight: 18.3 lb (8.3 kg)
- ETH Class B: ENS0091-2, Class B
- Approvals: NEMKO-GS, CE, and GOST
### Troubleshooting

Use the tables below to solve minor Back-UPS installation and operation problems. Consult APC On-line Technical Support or call APC Technical Support for assistance with problems that cannot be resolved using this document.

<table>
<thead>
<tr>
<th>Possible Cause</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Back-UPS will not switch on</strong></td>
<td>Check that the Back-UPS power plug is securely connected to the wall outlet.</td>
</tr>
<tr>
<td><strong>Back-UPS circuit breaker “tripped”</strong></td>
<td>Disconnect non-essential equipment from the Back-UPS. Reset the circuit breaker (located on the bottom of the Back-UPS) by pushing the rocker-type circuit breaker to the ON position. If the circuit breaker trips again, switch off the equipment one-at-a-time.</td>
</tr>
<tr>
<td><strong>Very low or no AC utility power</strong></td>
<td>Check the wall outlet that supplies AC power to the Back-UPS using a cable lamp. If the lamp bulb is very dim, half the AC utility power checked by a qualified electrician.</td>
</tr>
<tr>
<td><strong>Back-UPS operates on battery although normal utility voltage exists</strong></td>
<td>Connect the Back-UPS to another wall outlet or have a qualified electrician check the building wiring.</td>
</tr>
<tr>
<td><strong>Back-UPS does not provide expected backup time</strong></td>
<td>Unplug non-essential connected equipment, such as laser printers. Note: Devices that have motors or dimmer switches (laser printers, heaters, fans, lamps, and vacuum cleaners, for example) should not be connected to the Back-UPS outlets.</td>
</tr>
<tr>
<td><strong>Battery requires replacement</strong></td>
<td>Replace battery (see Order Replacement Battery). Batteries typically last 3-6 years, shorter if subjected to frequent power outages or elevated temperatures.</td>
</tr>
</tbody>
</table>

### Order Replacement Battery

Replace with an APC qualified battery. Replacement batteries can be ordered from APC Global Services. Have your Back-UPS HS model number available when ordering. Your model number can be found on the bottom of the unit.

### Warranty

The standard warranty is two (2) years from the date of purchase. APC’s standard procedure is to replace the original unit with a factory reconditioned unit. APC will ship the replacement unit once the defective unit has been received by the repair department, or cross-shipped upon receipt of a valid credit card number.

### Warranty Registration

To register this product for purposes of the warranty, please go to warranty.apc.com.

### APC Contact Information

<table>
<thead>
<tr>
<th>Technical Support</th>
<th><a href="http://www.apc.com/support">www.apc.com/support</a></th>
<th>Internet</th>
<th><a href="http://www.apc.com">www.apc.com</a></th>
<th>USA and Canada</th>
<th>800-800-4272</th>
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<th>Possible Cause</th>
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<tr>
<td><strong>A red indicator is illuminated</strong></td>
<td>Battery is not connected properly. Check the battery connections. Consult &quot;Connect/Install Battery, Install Battery Cover&quot; under &quot;Installation&quot; on the front page of this document.</td>
</tr>
<tr>
<td><strong>The Overload indicator is illuminated</strong></td>
<td>Disconnect one or more equipment power plugs until the indicator is no longer illuminated.</td>
</tr>
<tr>
<td><strong>Replace Battery indicator illuminated / alarm sounds when the unit is turned on</strong></td>
<td>Internal battery not connected. Check the battery connections. Consult &quot;Connect the Battery&quot; under &quot;Installation&quot; on the front page of this document. It shows how to access the battery and connect the wires.</td>
</tr>
<tr>
<td><strong>Red indicators are flashing</strong></td>
<td>Back-UPS failure. Call APC for service.</td>
</tr>
<tr>
<td><strong>ACT/LNK Indicator is not illuminated</strong></td>
<td>Unable to link to the Ethernet port. Connect another network device to the LAN connector. Verify all network connections.</td>
</tr>
<tr>
<td><strong>TX/RX Indicators are flashing</strong></td>
<td>Back-UPS failure. Contact APC technical support.</td>
</tr>
<tr>
<td><strong>Cannot access the Web interface of the Back-UPS</strong></td>
<td>Using the Back-UPS HS Software, check the assigned Internet Protocol (IP) address of the Back-UPS. If the assigned address is 0.0.0.0, shut down the Back-UPS HS Software and then restart the program. The equipment providing DHCP will reassign an IP Address to the Back-UPS. Verify you can &quot;ping&quot; the Back-UPS, as follows: Open an MS-DOS window and enter the Ping Command as: ping XXX.XXX.XXX.XXX (IP address of the device to be pinged) If a message similar to the following appears, a communication link between your computer and the device has been established: Ping xxxxxxxxx with 32 bytes of data Reply from xxxxxxxxx: bytes=32/2ms TTL=64 If you get the following message, Pinging xxxxxxxxx with 32 bytes of data Request timed out. there may be something wrong in your network configuration. Check the following items in sequence: 1. Ensure the ethernet cable is properly connected. 2. Ensure TCP/IP is properly configured on your computer. 3. Check that the ACT/LNK and TX/RX LEDs are illuminated. Verify that you are using Internet Explorer 5.0 (or higher), or Netscape Navigator 7.0 (or higher).</td>
</tr>
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### Table 2: Possible Cause.

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<tr>
<th>Possible Cause</th>
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<tr>
<td><strong>Back-UPS not connected to an AC power source</strong></td>
<td>Check the battery connections. Consult &quot;Connect/Install Battery, Install Battery Cover&quot; under &quot;Installation&quot; on the front page of this document.</td>
</tr>
<tr>
<td><strong>Back-UPS is excessively loaded</strong></td>
<td>Disconnect non-essential equipment from the Back-UPS. Reset the circuit breaker (located on the bottom of the Back-UPS) by pushing the rocker-type circuit breaker to the ON position. If the circuit breaker trips again, switch off the equipment one-at-a-time.</td>
</tr>
<tr>
<td><strong>Battery requires replacement</strong></td>
<td>The battery should be replaced within two weeks (see &quot;Order Replacement Battery&quot;). Failure to replace the battery will result in reduced run-time during a power outage.</td>
</tr>
</tbody>
</table>

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</tr>
<tr>
<td><strong>Replace Battery indicator illuminated / alarm sounds when the unit is turned on</strong></td>
<td>Internal battery not connected. Check the battery connections. Consult &quot;Connect the Battery&quot; under &quot;Installation&quot; on the front page of this document. It shows how to access the battery and connect the wires.</td>
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<td><strong>ACT/LNK Indicator is not illuminated</strong></td>
<td>Unable to link to the Ethernet port. Connect another network device to the LAN connector. Verify all network connections.</td>
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<tr>
<td><strong>TX/RX Indicators are flashing</strong></td>
<td>Back-UPS failure. Contact APC technical support.</td>
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<tr>
<td><strong>Cannot access the Web interface of the Back-UPS</strong></td>
<td>Using the Back-UPS HS Software, check the assigned Internet Protocol (IP) address of the Back-UPS. If the assigned address is 0.0.0.0, shut down the Back-UPS HS Software and then restart the program. The equipment providing DHCP will reassign an IP Address to the Back-UPS. Verify you can &quot;ping&quot; the Back-UPS, as follows: Open an MS-DOS window and enter the Ping Command as: ping XXX.XXX.XXX.XXX (IP address of the device to be pinged) If a message similar to the following appears, a communication link between your computer and the device has been established: Ping xxxxxxxxx with 32 bytes of data Reply from xxxxxxxxx: bytes=32/2ms TTL=64 If you get the following message, Pinging xxxxxxxxx with 32 bytes of data Request timed out. there may be something wrong in your network configuration. Check the following items in sequence: 1. Ensure the ethernet cable is properly connected. 2. Ensure TCP/IP is properly configured on your computer. 3. Check that the ACT/LNK and TX/RX LEDs are illuminated. Verify that you are using Internet Explorer 5.0 (or higher), or Netscape Navigator 7.0 (or higher).</td>
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